

THAT WHICH IS CLAIMED:

1. An isolated nucleic acid molecule selected from the group consisting of:
  - a) a nucleic acid molecule comprising the nucleotide sequence of SEQ ID NO:1 or 3;
  - 5 b) a nucleic acid molecule comprising a nucleotide sequence having at least 95% sequence identity to the nucleotide sequence of SEQ ID NO:1 or 3, wherein said nucleotide sequence encodes a polypeptide having pesticidal activity;
  - c) a nucleic acid molecule which encodes a polypeptide comprising the amino acid sequence of SEQ ID NO:2 or 4;
  - 10 d) a nucleic acid molecule comprising a nucleotide sequence encoding a polypeptide having at least 95% amino acid sequence identity to the amino acid sequence of SEQ ID NO:2 or 4, wherein said polypeptide has pesticidal activity; and,
  - e) a complement of any of a)-d).
- 15 2. An isolated nucleic acid molecule of claim 1, wherein said nucleotide sequence is a synthetic sequence that has been designed for expression in a plant.
3. The nucleic acid molecule of claim 2, wherein said synthetic sequence has  
20 an increased GC content.
4. A vector comprising the nucleic acid molecule of claim 1.
5. The vector of claim 4, further comprising a nucleic acid molecule  
25 encoding a heterologous polypeptide.
6. A host cell that contains the vector of claim 4.
7. The host cell of claim 6 that is a bacterial host cell.
- 30 8. The host cell of claim 6 that is a plant cell.

9. A transgenic plant comprising the host cell of claim 8.

10. The transgenic plant of claim 9, wherein said plant is selected from the  
5 group consisting of maize, sorghum, wheat, sunflower, tomato, crucifers, peppers, potato, cotton, rice, soybean, sugarbeet, sugarcane, tobacco, barley, and oilseed rape.

11. Transgenic seed of a plant of claim 9.

10 12. An isolated polypeptide selected from the group consisting of:

a) a polypeptide comprising the amino acid sequence of SEQ ID  
NO:2 or 4;

b) a polypeptide encoded by the nucleotide sequence of SEQ ID  
NO:1 or 3, wherein said polypeptide has pesticidal activity;

15 c) a polypeptide comprising an amino acid sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO:2 or 4, wherein said polypeptide has pesticidal activity; and,

d) a polypeptide that is encoded by a nucleotide sequence that is at  
least 95% identical to the nucleotide sequence of SEQ ID NO:1 or 3.

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13. The polypeptide of claim 12, further comprising a heterologous amino  
acid sequence.

14. An antibody that selectively binds to a polypeptide of claim 12.

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15. A composition comprising the polypeptide of claim 12.

16. The composition of claim 15, wherein said composition is selected from  
the group consisting of a powder, dust, pellet, granule, spray, emulsion, colloid, and  
30 solution.

17. The composition of claim 15, wherein said composition is prepared by desiccation, lyophilization, homogenization, extraction, filtration, centrifugation, sedimentation, or concentration of a culture of *Bacillus thuringiensis* cells.

5 18. The composition of claim 15, comprising from about 1% to about 99% by weight of said polypeptide.

19. A method for producing a polypeptide with pesticidal activity, comprising culturing the host cell of claim 6 under conditions in which a nucleic acid molecule encoding the polypeptide is expressed, said polypeptide being selected from the group consisting of:

- a) a polypeptide comprising the amino acid sequence of SEQ ID NO:2 or 4;
- b) a polypeptide encoded by the nucleotide sequence of SEQ ID NO:1 or 3, wherein said polypeptide has pesticidal activity;
- c) a polypeptide comprising an amino acid sequence having at least 95% sequence identity to the amino acid sequence of SEQ ID NO:2 or 4, wherein said polypeptide has pesticidal activity; and,
- d) a polypeptide that is encoded by a nucleotide sequence that is at least 95% identical to a nucleotide sequence of SEQ ID NO:1 or 3.

20. A method for controlling a lepidopteran or coleopteran pest population comprising contacting said population with a pesticidally-effective amount of a polypeptide of claim 12.

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21. A method for killing a lepidopteran or coleopteran pest, comprising contacting said pest with, or feeding to said pest, a pesticidally-effective amount of a polypeptide of claim 12.

22. A plant having stably incorporated into its genome a DNA construct comprising a nucleotide sequence that encodes a protein having pesticidal activity, wherein said nucleotide sequence is selected from the group consisting of:

- a) a nucleotide sequence of SEQ ID NO:1 or 3;
  - 5 b) a nucleotide sequence having at least 95% sequence identity to a nucleotide sequence of SEQ ID NO:1 or 3, wherein said nucleotide sequence encodes a polypeptide having pesticidal activity;
  - c) a nucleotide sequence encoding a polypeptide comprising an amino acid sequence of SEQ ID NO:2 or 4; and,
  - 10 d) a nucleotide sequence encoding a polypeptide having at least 95% amino acid sequence identity to the amino acid sequence of SEQ ID NO:2 or 4, wherein said polypeptide has pesticidal activity;
- wherein said nucleotide sequence is operably linked to a promoter that drives expression of a coding sequence in a plant cell.

23. A plant cell having stably incorporated into its genome a DNA construct comprising a nucleotide sequence that encodes a protein having pesticidal activity, wherein said nucleotide sequence is selected from the group consisting of:

- a) a nucleotide sequence of SEQ ID NO:1 or 3;
  - b) a nucleotide sequence having at least 95% sequence identity to a
  - 20 nucleotide sequence of SEQ ID NO:1 or 3, wherein said nucleotide sequence encodes a polypeptide having pesticidal activity;
  - c) a nucleotide sequence encoding a polypeptide comprising an amino acid sequence of SEQ ID NO:2 or 4; and,
  - d) a nucleotide sequence encoding a polypeptide having at least 95%
  - 25 amino acid sequence identity to the amino acid sequence of SEQ ID NO:2 or 4, wherein said polypeptide has pesticidal activity;
- wherein said nucleotide sequence is operably linked to a promoter that drives expression of a coding sequence in a plant cell.